

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
Physics			
1950		The development of the photographic method of studying nuclear processes and the discoveries regarding mesons made with this method.	Cecil Frank Powell
1951		The pioneer work on the transmutation of atomic nuclei by artificially accelerated atomic particles.	Sir John Douglas Cockcroft; Ernest Thomas Sinton Walton
1952		The development of new methods for nuclear magnetic precision measurements and discoveries in connection therewith.	Felix Bloch; Edward Mills Purcell
1953		Demonstration of the phase contrast method, especially for his invention of the phase contrast microscope.	Frits (Frederik) Zernike
1954		Fundamental research in quantum mechanics, especially for the statistical interpretation of the wavefunction; and for the coincidence method and the discoveries made therewith.	Max Born; Walther Bothe
1955		Discoveries concerning the fine structure of the hydrogen spectrum; and precision determination of the magnetic moment of the electron.	Willis Eugene Lamb; Polykarp Kusch
1956		Researches on semiconductors and the discovery of the transistor effect.	William Shockley; John Bardeen; Walter Houser Brattain
1957		Penetrating investigation of the so-called parity laws which has led to important discoveries regarding the elementary particles.	Chen Ning Yang; Tsung-Dao Lee
1958		The discovery and the interpretation of the Cherenkov effect.	Pavel Alekseyevich Cherenkov; Il'ja Mikhailovich Frank; Igor Yevgenyevich Tamm
1959		The discovery of the antiproton.	Emilio Gino Segre; Owen Chamberlain
1960	**	The invention of the bubble chamber.	Donald A. Glaser
1961	**	Pioneering studies of electron scattering in atomic nuclei and for the thereby achieved discoveries concerning the structure of the nucleons; and research concerning the resonance absorption of gamma radiation and the discovery in this connection of the effect which bears his name.	Robert Hofstadter; Rudolf Ludwig Mössbauer
1962		Pioneering theories for condensed matter, especially liquid helium	Lev Davidovich Landau
1963	**	Contributions to the theory of the atomic nucleus and the elementary particles, particularly through the discovery and application of fundamental symmetry principles; and discoveries concerning nuclear shell structure.	Eugene P. Wigner; Maria Goeppert-Mayer; J. Hans D. Jensen
1964		Fundamental work in the field of quantum electronics, which has led to the construction of oscillators and amplifiers based on the maser-laser principle.	Charles H. Townes; Nicolay Gennadiyevich Basov; Aleksandr Mikhailovich Prokhorov

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950-99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
		Physics, continued	
1965		Fundamentals work in quantum electrodynamics, with deep-ploughing consequences for the physics of elementary particles.	Sin-Itiro Tomonaga; Julian Schwinger; Richard P. Feynman
1966		The discovery and development of optical methods for studying hertzian resonances in atoms.	Alfred Kastler
1967	**	Contributions to the theory of nuclear reactions, especially the discoveries concerning the energy production in stars.	Hans Albrecht Bethe
1968	**	Decisive contributions to elementary particle physics, in particular the discovery of a large number of resonance states, made possible through the development of the technique of using hydrogen bubble chamber and data analysis.	Luis W. Alvarez
1969	**	Contributions and discoveries concerning the classification of elementary particles and their interactions.	Murray Gell-Mann
1970		Fundamental work and discoveries in magneto-hydrodynamics with fruitful applications in different parts of plasma physics; and fundamental work and discoveries concerning antiferromagnetism and ferrimagnetism which have led to important applications in solid state physics.	Hannes Alfvén; Louis Néel
1971		Invention and development of the holographic method.	Dennis Gabor
1972	**	Theory of superconductivity, usually called the BCS-theory.	John Bardeen; Leon N. Cooper; J. Robert Schrieffer
1973		Experimental discoveries regarding tunneling phenomena in semiconductors and superconductors, respectively; and theoretical predictions of the properties of a super current through a tunnel barrier, in particular those phenomena which are generally known as the Josephson effects.	Leo Esaki; Ivar Giaever; Brian D. Josephson
1974		Pioneering research in radio astrophysics: observations and inventions; in particular of the aperture synthesis technique, and decisive role in the discovery of pulsars.	Sir Martin Ryle; Antony Hewish
1975	*	Discovery of the connection between collective motion and particle motion in atomic nuclei and the development of the theory of the structure of the atomic nucleus based on this connection.	Aage Bohr; Ben Mottelson; James Rainwater
1976	*	Pioneering work in the discovery of a heavy elementary particle of a new kind.	Burton Richter; Samuel C.C. Ting
1977		Fundamental theoretical investigations of the electronic structure of magnetic and disordered systems.	Phillip W. Anderson; Sir Nevill F. Mott; John H. VanVleck
1978	*	Basic inventions and discoveries in the area of low-temperature physics; and the discovery of cosmic microwave background radiation.	Pyotr Leonidovich Kapitsa; Arno A. Penzias; Robert W. Wilson
1979	*	Contributions to the theory of the unified weak and electromagnetic interaction between elementary particles, including inter alia the prediction of the weak neutral current.	Sheldon L. Glashow; Abdus Salam; Steven Weinberg
1980	*	Discovery of violations of fundamental symmetry principles in the decay of neutral K-mesons.	James W. Cronin; Val L. Fitch

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
		Physics, continued	
1981	*	Contribution to the development of laser spectroscopy; and contribution to the development of high-resolution electron spectroscopy.	Nicolaas Bloembergen; Arthur L. Schawlow; Kai M. Siegbahn
1982	*	Theory for critical phenomena in connection with phase transitions.	Kenneth G. Wilson
1983	*	Theoretical studies of the physical processes of importance to the structure and evolution of the stars; and theoretical and experimental studies of the nuclear reactions of importance in the formation of the chemical elements in the universe.	Subramanyan Chandrasekhar; William A. Fowler
1984		Decisive contributions to the large project, which led to the discovery of the field particles W and Z, communicators of weak interaction.	Carlo Rubbia; Simon Van Der Meer
1985		Discovery of the quantized Hall effect.	Klaus Von Klitzing
1986		Fundamental work in electron optics, and the design of the first electron microscope; and the design of the scanning tunneling microscope.	Ernst Ruska; Gerd Binnig; Heinrich Rohrer
1987		Important breakthrough in the discovery of superconductivity in ceramic materials.	J. Georg Bednorz; K. Alexander Müller
1988	*	The neutrino beam method and the demonstration of the doublet structure of the leptons through the discovery of the muon neutrino.	Leon M. Lederman; Melvin Schwartz; Jack Steinberger
1989	*	Invention of the separated oscillatory fields method and its use in the hydrogen maser and other atomic clocks; and the development of the ion trap technique.	Norman F. Ramsey; Hans G. Dehmelt; Wolfgang Paul
1990		Pioneering investigations concerning deep inelastic scattering of electrons on protons and bound neutrons, which have been of essential importance for the development of the quark model in particle physics.	Jerome I. Friedman; Henry W. Kendall; Richard E. Taylor
1991		Discovery that methods developed for studying order phenomena in simple systems can be generalized to more complex forms of matter, in particular to liquid crystals and polymers.	Pierre-Gilles de Gennes
1992		Invention and development of particle detectors, in particular the multiwire proportional chamber.	Georges Charpak
1993	*	Discovery of a new type of pulsar, a discovery that has opened up new possibilities for the study of gravitation.	Russell A. Hulse; Joseph H. Taylor, Jr.
1994	*	Pioneering contributions to the development of neutron scattering techniques for studies of condensed matter; the development of neutron spectroscopy, and for the development of the neutron diffraction technique.	Bertram N. Brockhouse; Clifford G. Shull
1995	*	Pioneering experimental contributions to lepton physics: for the discovery of the tau lepton, and the detection of the neutrino.	Martin L. Perl; Frederick Reines
1996	*	Discovery of superfluidity in helium-3.	David M. Lee; Douglas D. Osheroff; Robert C. Richardson

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950-99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
1997	*	Development of methods to cool and trap atoms with laser light.	Steven Chu; Claude Cohen-Tannoudji; William D. Phillips
1998	*	Discovery of a new form of quantum fluid with fractionally charged excitations.	Robert B. Laughlin; Horst L. Störmer; Daniel C. Tsui
1999		Elucidation of the quantum structure of electroweak interactions in physics.	Gerardus 't Hooft; Martinus J.G. Veltman

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
1950		Discovery and development of the diene synthesis.	Otto Paul Hermann Diels; Kurt Alder
1951	**	Discoveries in the chemistry of the transuranium elements.	Edwin Mattison McMillan; Glenn Theodore Seaborg
1952		Invention of partition chromatography.	Archer John Porter Martin; Richard Laurence Millington Synge
1953		Discoveries in the field of macromolecular chemistry.	Hermann Staudinger
1954		Research into the nature of the chemical bond and its application to the elucidation of the structure of complex substances.	Linus Carl Pauling
1955		Work on biochemically important sulphur compounds, especially for the first synthesis of a polypeptide hormone.	Vincent du Vigneaud
1956		Researches into the mechanism of chemical reactions.	Sir Cyril Norman Hinshelwood; Nikolay Nikolaevich Semenov
1957		Work on nucleotides and nucleotide co-enzymes.	Lord Alexander R. Todd
1958		Work on the structure of proteins, especially that of insulin.	Frederick Sanger
1959		Discovery and development of the polarographic methods of analysis.	Jaroslav Heyrovsky
1960	**	Method to use carbon-14 for age determination in archaeology, geology, geophysics, and other branches of science.	Willard Frank Libby
1961		Research on the carbon dioxide assimilation in plants.	Melvin Calvin
1962		Studies of the structures of globular proteins.	Max Ferdinand Perutz; Sir John Cowdery Kendrew
1963		Discoveries in the field of the chemistry and technology of high polymers.	Karl Zeigler; Giulio Natta
1964		Determinations by X-ray techniques of the structures of important biochemical substances.	Dorothy Crowfoot Hodgkin
1965	**	Outstanding achievements in the art of organic synthesis.	Robert Burns Woodward
1966	**	Fundamental work concerning chemical bonds and the electronic structure of molecules by the molecular orbital method.	Robert S. Mulliken
1967		Studies of extremely fast chemical reactions, effected by disturbing the equilibrium by means of very short pulses of energy.	Manfred Eigen; Ronald George Porter
1968		Discovery of the reciprocal relations bearing his name, which are fundamental for the thermodynamics of irreversible processes.	Wreyford Norrish; Lord George Porter Lars Onsager

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950-99

Year	NSF Funding	Effort for which Nobel Prize awarded: Chemistry, continued	Laureate(s)
1969		Contributions to the development of the concept of conformation and its applications in chemistry.	Sir Derek H.R. Barton; Odd Hassel
1970		Discovery of sugar nucleotides and their role in the biosynthesis of carbohydrates.	Luis F. Leloir
1971		Contributions to the knowledge of electronic structure and geometry of molecules, particularly free radicals.	Gerhard Herzberg
1972	**	Work on ribonuclease, especially concerning the connection between the amino acid sequence and the biologically active conformation; and the contribution to the understanding of the connection between chemical structure and catalytic activity of the active center of the ribonuclease molecule.	Christian B. Anfinsen; Stanford Moore; William H. Stein
1973		Pioneering work, performed independently, on the chemistry of the organometallic, so-called sandwich compounds.	Ernst Otto Fischer; Sir Geoffrey Wilkinson
1974	**	Fundamental achievements, both theoretical and experimental, in the physical chemistry of the macromolecules.	Paul J. Flory
1975		Work on the stereochemistry of enzyme-catalyzed reactions; and research into the stereochemistry of organic molecules and reactions.	Sir John Warcup Cornforth; Vladimir Prelog
1976	*	Studies on the structure of boranes illuminating problems of chemical bonding.	William N. Lipscomb
1977		Contributions to nonequilibrium thermodynamics, particularly the theory of dissipative structures.	Ilya Prigogine
1978		Contribution to the understanding of biological energy transfer through the formulation of the chemiosmotic theory.	Peter D. Mitchell
1979	*	Development of the use of boron- and phosphorus-containing compounds, respectively, into important reagents in organic synthesis.	Herbert C. Brown; Georg Wittig
1980	*	Fundamental studies of the biochemistry of nucleic acids, with particular regard to recombinant-DNA; and contributions concerning the determination of base sequences in nucleic acids.	Paul Berg; Walter Gilbert; Frederick Sanger
1981	*	Theories, developed independently, concerning the course of chemical reactions.	Kenichi Fukui; Roald Hoffmann
1982		Development of crystallographic electron microscopy and his structural elucidation of biologically important nuclei acid-protein complexes.	Sir Aaron Klug
1983	*	Work on the mechanism of electron transfer reactions, especially in metal complexes.	Henry Taube
1984	**	Development of methodology for chemical synthesis on a solid matrix.	Robert Bruce Merrifield
1985	*	Outstanding achievements in the development of direct methods for the determination of crystal structures.	Herbert A. Hauptman; Jerome Karle
1986	*	Contributions concerning the dynamics of chemical elementary processes.	Dudley R. Herschbach; Yuan T. Lee; John C. Polanyi

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
		Chemistry, continued	
1987	*	Development and use of molecules with structure-specific interactions of high selectivity.	Donald J. Cram; Jean-Marie Lehn; Charles J. Pedersen
1988		The determination of the three-dimensional structure of a photosynthetic reaction center.	Johann Deisenhofer; Robert Huber; Hartmut Michel
1989	*	Discovery of catalytic properties of RNA.	Sidney Altman; Thomas R. Cech
1990	*	Development of the theory and methodology of organic synthesis.	Elias James Corey
1991		Contributions to the development of the methodology of high resolution nuclear magnetic resonance (NMR) spectroscopy.	Richard R. Ernst
1992	*	Contributions to the theory of electron transfer reactions in chemical systems.	Rudolph A. Marcus
1993		Contributions to the developments of methods within DNA-based chemistry: invention of the polymerase chain reaction (PCR) method; and fundamental contributions to the establishment of oligonucleotide-based, site-directed mutagenesis and its development for the protein studies.	Kary B. Mullis; Michael Smith
1994	*	Contribution to carbocation chemistry.	George A. Olah
1995	*	Work in atmospheric chemistry, particularly concerning the formation and decomposition of ozone.	Paul J. Crutzen; Mario J. Molina; F. Sherwood Rowland
1996	*	Discovery of fullerenes.	Robert F. Curl, Jr.; Sir Harold W. Kroto; Richard E. Smalley
1997	*	Elucidation of the enzymatic mechanism underlying the synthesis of adenosine triphosphate (ATP); and for the first discovery of an ion-transporting enzyme, Na ⁺ ,K ⁺ -ATPase.	Paul D. Boyer; John E. Walker; Jens C. Skou
1998	*	Development of the density-functional theory; and development of computational methods in quantum chemistry.	Walter Kohn; John A. Pople
1999	*	Studies of the transition states of chemical reactions using femtosecond spectroscopy.	Ahmed H. Zewail

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
1950		Discoveries relating to the hormones of the adrenal cortex, their structure and biological effects.	Edward Calvin Kendall; Tadeus Reichstein; Philip Showalter Hench
1951		Discoveries concerning yellow fever and how to combat it.	Max Theiler
1952		Discovery of streptomycin, the first antibiotic effective against tuberculosis.	Selman Abraham Waksman
1953		Discovery of the citric acid cycle; and discovery of co-enzyme A and its importance for intermediary metabolism.	Sir Hans Adolf Krebs; Fritz Albert Lipmann
1954		Discovery of the ability of poliomyelitis viruses to grow in cultures of various type of tissue.	John Franklin Enders; Thomas Huckle Weller; Frederick Chapman Robbins
1955		Discoveries concerning the nature and mode of action of oxidation enzymes.	Axel Hugo Theodor Theorell
1956		Discoveries concerning heart catheterization and pathological changes in the circulatory system.	André Frédéric Cournand; Werner Forssmann; Dickinson W. Richards
1957		Discoveries relating to synthetic compounds that inhibit the action of certain body substances, and especially their action on the vascular system and the skeletal muscles.	Daniel Bovet
1958		Discovery that genes act by regulating definite chemical events; and discoveries concerning genetic recombination and the organization of the genetic material of bacteria.	George Wells Beadle; Edward Lawrie Tatum; Joshua Lederberg
1959	**	Discovery of the mechanism in the biological synthesis of ribonucleic acid and deoxyribonucleic acid.	Severo Ochoa; Arthur Kornberg
1960		Discovery of acquired immunological tolerance.	Sir Frank MacFarlane Burnet; Sir Peter Brian Medawar
1961		Discoveries of the physical mechanism of stimulation within the cochlea.	Georg Von Békésy
1962		Discoveries concerning the molecular structure of nuclear acids and its significance for information transfer in living material.	Francis Harry Compton Crick; James Dewey Watson; Maurice Hugh Frederick Wilkins
1963		Discoveries concerning the ionic mechanisms involved in excitation and inhibition in the peripheral and central portions of the nerve cell membrane.	Sir John Carew Eccles; Sir Alan Lloyd Hodgkin; Sir Andrew Fielding Huxley
1964	**	Discoveries concerning the mechanism and regulation of the cholesterol and fatty acid metabolism.	Konrad Bloch; Feodor Lynen
1965		Discoveries concerning genetic control of enzyme and virus synthesis.	Francois Jacob; André Lwoff; Jacques Monod

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
		Physiology or medicine, continued	
1966		Discovery of tumor-inducing viruses; and discoveries concerning hormonal treatment of prostatic cancer.	Peyton Rous; Charles Brenton Huggins
1967		Discoveries concerning the primary physiological and chemical visual processes in the eye.	Ragnar Granit; Haldan Keffer Hartline; George Wald
1968		Interpretation of the genetic code and its function in protein synthesis.	Robert W. Holley; Har Gobind Khorana; Marshall W. Nirenberg
1969	**	Discoveries concerning the replication mechanism and the genetic structure of viruses.	Max Delbrück; Alfred D. Hershey; Salvador E. Luria
1970		Discoveries concerning the humoral transmitters in the nerve terminals and the mechanism for their storage, release, and inactivation.	Sir Bernard Katz; Ulf VonEuler; Julius Axelrod
1971		Discoveries concerning the mechanisms of the action of hormones.	Earl W. Sutherland, Jr.
1972	*	Discoveries concerning the chemical structure of antibodies.	Gerald M. Edelman; Rodney R. Porter
1973		Discoveries concerning organization and elicitation of individual and social behavior patterns.	Karl Von Frisch; Konrad Lorenz; Nikolaas Tinbergen
1974	**	Discoveries concerning the structural and functional organization of the cell.	Albert Claude; Christian deDuve; George E. Palade
1975	*	Discoveries concerning the interaction between tumor viruses and the genetic material of the cell.	David Baltimore; Renato Dulbecco; Howard Martin Temin
1976	*	Discoveries concerning new mechanisms for the origin and dissemination of infectious diseases.	Baruch S. Blumberg; D. Carleton Gajdusek
1977		Discoveries concerning the peptide hormone production of the brain; and the development of radioimmunoassays of peptide hormones.	Roger Guillemin; Andrew V. Schally; Rosalyn Yalow
1978	*	Discovery of restriction enzymes and their application to problems of molecular genetics.	Werner Arber; Daniel Nathans; Hamilton O. Smith
1979	**	Development of computer-assisted tomography.	Allan M. Cormack; Sir Godfrey N. Hounsfield
1980		Discoveries concerning genetically determined structures on the cell surface that regulate immunological reactions.	Baruj Benacerraf; Jean Dausset; George D. Snell
1981	*	Discoveries concerning the functional specialization of the cerebral hemispheres; and discoveries concerning information processing in the visual system.	Roger W. Sperry; David H. Hubel; Torsten N. Wiesel

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:		Laureate(s)
			Physiology or medicine, continued	
1982		Discoveries concerning prostaglandins and related biologically active substances.		Sune K. Bergström; Bengt I. Samuelsson; Sir John R. Vane
1983		Discovery of mobile genetic elements.		Barbara McClintock
1984		Theories concerning the specificity in development and control of the immune system and the discovery of the principle for production of monoclonal antibodies.		Niels K. Jerne; Georges J.F. Köhler; César Milstein
1985		Discoveries concerning the regulation of cholesterol metabolism.		Michael S. Brown; Joseph L. Goldstein
1986		Discoveries of growth factors.		Stanley Cohen; Rita Levi-Montalcini
1987		Discovery of the genetic principle for generation of antibody diversity.		Susumu Tonegawa
1988		Discoveries of important principles for drug treatment.		Sir James W. Black; Gertrude B. Elion; George H. Hitchings
1989		Discovery of the cellular origin of retroviral oncogenes.		J. Michael Bishop; Harold E. Varmus
1990		Discoveries concerning organ and cell transplantation in the treatment of human disease.		Joseph E. Murray; E. Donnall Thomas
1991		Discoveries concerning the function of single ion channels in cells.		Erwin Neher; Bert Sakmann
1992	*	Discoveries concerning reversible protein phosphorylation as a biological regulatory mechanism.		Edmond H. Fischer; Edwin G. Krebs
1993	*	Discoveries of split genes.		Richard J. Roberts; Phillip A. Sharp
1994	*	Discovery of G-proteins and the role of these proteins in signal transduction in cells.		Alfred G. Gilman; Martin Rodbell
1995	*	Discoveries concerning the genetic control of early embryonic development.		Edward B. Lewis; Christiane Nüsslein-Volhard; Eric F. Wieschaus
1996		Discoveries concerning the specificity of the cell-mediated immune defense.		Peter C. Doherty; Rolf M. Zinkernagel
1997	*	Discovery of prions – a new biological principle of infection.		Stanley B. Prusiner
1998		Discoveries concerning nitric oxide as a signaling molecule in the cardiovascular system.		Robert F. Furchgott; Louis J. Ignarro; Ferid Murad
1999		Discovery that proteins have intrinsic signals that govern their transport and localization in the cell.		Günter Blobel

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:	Laureate(s)
Economics			
1969		Development and application of dynamic models for the analysis of economic processes.	Ragnar Frisch; Jan Tinbergen
1970	*	Scientific work through which he has developed static and dynamic economic theory and actively contributed to raising the level of analysis in economic science.	Paul A. Samuelson
1971		Empirically founded interpretation of economic growth which has led to new and deepened insight into the economic and social structure and process of development.	Simon Kuznets
1972	*	Pioneering contributions to general economic equilibrium theory and welfare theory.	Sir John R. Hicks; Kenneth J. Arrow
1973	*	Development of the input–output method and for its application to important economic problems.	Wassily Leontief
1974		Pioneering work in the theory of money and economic fluctuations and penetrating analysis of the interdependence of economic, social, and institutional phenomena.	Gunnar Myrdal; Friedrich August VonHayek
1975	*	Contributions to the theory of optimum allocation of resources.	Leonid Vitaliyevich Kantorovich; Tjalling C. Koopmans
1976		Achievements in the fields of consumption analysis, monetary history and theory and for the demonstration of the complexity of stabilization policy.	Milton Friedman
1977		Pathbreaking contribution to the theory of international trade and international capital movements.	Bertil Ohlin; James E. Meade
1978	*	Pioneering research into the decision-making process within economic organizations.	Herbert A. Simon
1979		Pioneering research into economic development research with particular consideration of the problems of developing countries.	Theodore W. Schultz; Sir Arthur Lewis
1980	*	Creation of econometric models and the application to the analysis of economic fluctuations and economic policies.	Lawrence R. Klein
1981	*	Analysis of financial markets and their relations to expenditure decisions, employment, production, and prices.	James Tobin
1982	*	Seminal studies of industrial structures, function of markets, and causes and effects of public regulation.	George J. Stigler
1983	*	Incorporating new analytical methods into economic theory and rigorous reformulation of the theory of general equilibrium.	Gerard Debreu
1984		Fundamental contributions to the development of systems of national accounts and hence great improvement in the basis for empirical economic analysis.	Sir Richard Stone
1985	*	Pioneering analyses of saving and of financial markets.	Franco Modigliani
1986	*	Development of the contractual and constitutional bases for the theory of economic and political decision-making.	James M. Buchanan, Jr.
1987	*	Contributions to the theory of economic growth.	Robert M. Solow

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 1-1.
Nobel Prize awards: 1950–99

Year	NSF Funding	Effort for which Nobel Prize awarded:		Laureate(s)
			Economics, continued	
1988		Pioneering contributions to the theory of markets and efficient utilization of resources.		Maurice Allais
1989		Clarification of the probability theory foundations of econometrics and analyses of simultaneous economic structures.		Trygve Haavelmo
1990	*	Pioneering work in the theory of financial economics.		Harry M. Markowitz; Merton H. Miller; William F. Sharpe
1991		Discovery and clarification of the significance of transaction costs and property rights for the institutional structure and functioning of the economy.		Ronald H. Coase
1992	*	Extension of the domain of microeconomic analysis to a wide range of human behavior and interaction, including nonmarket behavior.		Gary S. Becker
1993	*	Renewal of research in economic history by applying economic theory and quantitative methods in order to explain economic and institutional change.		Robert W. Fogel; Douglass C. North
1994	*	Pioneering analysis of equilibria in the theory of noncooperative games.		John C. Harsanyi; John F. Nash; Reinhard Selten
1995	*	Development and application of the hypothesis of rational expectations, which have transformed macroeconomic analysis and deepened understanding of economic policy.		Robert E. Lucas, Jr.
1996		Fundamental contributions to the economic theory of incentives under asymmetric information.		James A. Mirrlees; William Vickrey
1997	*	New method to determine the value of derivatives.		Robert C. Merton; Myron S. Scholes
1998	*	Contributions to welfare economics.		Amartya Sen
1999		Analysis of monetary and fiscal policy under different exchange rate regimes and analysis of optimum currency areas.		Robert A. Mundell

* = Funded by NSF before receiving Nobel Prize; ** = Funded by NSF after receiving Nobel Prize

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS) and Office of Legislative and Public Affairs (NSF/OLPA), unpublished tabulations, 1999, and «<http://www.nobel.se/enm-index.html>»

See page 1-29 in Volume 1.

Page 12 of 12

Science & Engineering Indicators – 2000